
Kirkan Wind Farm

Environmental Impact Assessment Report (EIA-R)

Appendix 6.6 Outline DRAFT Habitat Management Principles



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Figure 1: Project Area

Figure 2: Estate Boundary

1 INTRODUCTION

1.1.1 This document has been prepared to accompany the Kirkan Wind Farm Environmental Impact Assessment Report (EIAR).

It presents outline habitat management principles to be finalised in consultation with SNH, The Highland Council (THC) and additional relevant stakeholders following receipt of planning consent and implemented as a Habitat Management Plan (HMP) in accordance with a suitably worded condition of consent.

1.1.2 The finalisation and implementation of the HMP would be completed prior to the end of the first year of operation of the wind farm, after which the HMP would remain in place as agreed, subject to effectiveness, for the remaining operational lifetime of the proposed development as consented.

1.1.3 The following terms are used within this document:

- **Project area** – the red line planning application boundary as shown in **Figure 1**; and,
- **Estate boundary** – the blue line Strathvaich Estate boundary as shown in **Figure 2**.

2 STRUCTURE OF THE HABITAT MANAGEMENT PLAN

2.1.1 There will be four Aims and related objectives of the Kirkan Wind Farm HMP, to be achieved through the implementation of management prescriptions and habitat creation practices outlined herein.

2.1.2 The success of management prescriptions and habitat creation in achieving the aims and objectives of the HMP will be monitored, with the results reported, in accordance with timings and protocols to be agreed with SNH, THC and additional relevant stakeholders.

2.1.3 The HMP should be read in conjunction with Appendices 9.4 (Outline Peat Management Plan) and 2.1 (Forestry). The combined aims of the three documents are to preserve and enhance notable habitats and forestry, and provide compensatory woodland planting within the Project Area and wider Strathvaich Estate (**Figure 2**).

3 AIMS AND OBJECTIVES

3.1.1 It is proposed that the objectives, aims and management prescriptions outlined herein will be further refined and prescribed in consultation with The Highland Council (and additional relevant stakeholders) following pre-construction baseline surveys (if required), stakeholder consultations and/or site investigation works as necessary.

3.2 Aim 1: Enhancement of Moorland Habitats

Objective 1: Promote Improved Structural Diversity of Wet Heath and Blanket Bog

3.2.1 Objective 1 will complement the Outline Peat Management Plan (Appendix 9.4) and mitigation commitments made in Chapter 8 Hydrology and 9 (Geology, Hydrogeology and Peat) in relation to using excavated soil and peat in site restoration and rehabilitation at the end of the construction period. Vegetation cover will be re-established as quickly as possible on track and infrastructure verges and cut slopes, by re-laying of excavated peat acrotelm, to improve slope stability and provide erosion protection. Additional methods, including hydroseeding and/or use of a biodegradable geotextile, would be considered if necessary in specific areas. Opportunities for habitat improvement to be considered include the following:

- Reinstatement of peat turves and vegetated peat divots.
- Use of mulches or heather brash (or occasionally a biodegradable geotextile, like jute) and re-seeding to protect areas of bare peat from further erosion
- Management of grazing by livestock and deer in sensitive areas (see below).
- Re-profiling of peat hags, and hydroseeding if necessary and appropriate.
- Ditch-blocking to promote re-wetting (where this is appropriate and does not interfere with estate management or wind farm operational activities)

3.2.2 The success of the habitat improvement and peat restoration activities would be monitored on a regular basis for an ongoing period during the operational phase of the proposed development. The details will be included the HMP to be agreed.

3.2.3 Areas suitable for peatland habitat improvement/restoration works have been identified in Figure 1 below. The expected, minimum and maximum areas for restoration relate to the calculations informing the Carbon Calculator (Appendix 12.1) Chapter 12: Climate Change chapter.

3.2.4 The project area is currently primarily grazed by deer and highland cattle. It is proposed that livestock grazing within the project area and access for deer will continue throughout the operational lifetime of the development and as such, habitat management principles to be further detailed and implemented will comprise a sensitive grazing regime. The objective will be to manage grazing densities within the management area, to prevent overgrazing and encourage and maintain a good overall site condition.

3.2.5 As detailed within **Appendix 6.5 ‘Deer Assessment’** of the Kirkan Wind Farm EIAR, red deer numbers within project area and surrounding southern extent of the Strathvaich Estate are low, however the proposed development will provide improved access for culling and as such, more efficient deer control measures may be implemented, with densities <3-5 deer km² (a sustainable density for blanket bog and heathland habitats; Putman *et al.*, 2011¹; SNH, 2014²), likely to be realised.

3.2.6 As such, further target deer management is not proposed as part of the HMP.

3.3 Aim 2: Enhancement of Fisheries Habitats

3.3.1 Baseline surveys to inform the assessment of the proposed development did not identify any high calibre salmonid spawning habitat within the project area, but the Glascarnoch River and Blackwater, downstream of the project area is known to support populations of both Atlantic salmon *Salmo salar* and sea trout *Salmo trutta*.

3.3.2 The possibility for fisheries habitat enhancement within the catchments of the Blackwater falling within Strathvaich Estate is therefore proposed to assist and complement the Cromarty Firth Fisheries Trust Riverside Woodland Restoration Project.

¹ Putman, R., Landbein, J., Green, P. & Watson, P. (2011) *Identifying threshold densities for wild deer in the UK above which negative impacts may occur*. Mammal Review, **41** (3), pp 175-196.

² SNH (2014) Planning for development: *What to consider and include in a deer assessments and management at development sites*. Scottish Natural Heritage, Inverness.

- 3.3.3 As such, opportunities to enhance and/or create fish habitats by way of the creation of fish cover and riparian planting will be identified in consultation with the Cromarty Firth Fisheries Trust.
- 3.3.4 Prescriptive measures for inclusion within the HMP will then be agreed with SNH, THC, FCS and additional relevant stakeholders.
- 3.3.5 The potential for restoration and or creation of spawning habitats will also be explored.

Objective 1: Management of Fish Cover

- 3.3.6 Opportunities to increase habitat complexity for fisheries within watercourses of Strathvaich Estate will be identified in consultation with the Cromarty Firth Fisheries Trust, with prescriptive measures agreed with SNH, THC and additional relevant stakeholders.
- 3.3.7 Measures for improving and/or creating fish cover to be explored will comprise techniques such as placing boulders and wood debris in water course channels, which whilst providing refugia for both juvenile and adult fish can also provide opportunities for macroinvertebrates.

Objective 2: Management of Bank Side Vegetation

- 3.3.8 Native riparian planting can deliver benefits for fisheries, including the casting of shade, maintenance of cool water temperatures, provision of cover and sources of food from in-falling litter and insects.
- 3.3.9 Riparian planting can also deliver opportunities for foraging and commuting bats, terrestrial mammals, birds (including black grouse) and reptiles. As such, prescriptive measures may incorporate additional objectives for other species but will remain sensitive to the potential for exacerbating potential impacts upon such species groups resulting from the wind farm development (e.g. mortality risks to bats through interaction with wind farm infrastructure).
- 3.3.10 Opportunities for riparian planting within the Strathvaich Estate will therefore be identified in consultation with the Cromarty Firth Fisheries Trust, with prescriptive measures agreed with SNH, THC, FCS and additional relevant stakeholders.

3.4 Aim 3: Enhancement of Opportunities for Black Grouse

- 3.4.1 An objective of the riparian planting will be to enhance terrestrial biodiversity, with woodland and edge habitat suitable for species including black grouse.

Objective 1: Riparian Planting

- 3.4.2 Riparian planting to be prescribed will include both continuous and discontinuous shrub and tree dominated planting. Discontinuous areas of planting will ensure that extensive shading of existing food plants (e.g. grasses and blueberry, where present) for black grouse does not occur, with tree and shrub species planted selected for their preference by black grouse such as (amongst others) birch, and willow species together with Scots pine, rowan and juniper.
- 3.4.3 Such species will provide additional food sources for black grouse in the spring and winter, together with suitable cover from predation for both adults and broods.

3.5 Aim 4: Reduction in Predation Risks for Water Vole

- 3.5.1 Evidence of mink presence was recorded during baseline terrestrial mammal surveys to inform the design and assessment of the proposed development.

Objective 1: Predator Control

- 3.5.2 Measures to monitor and control the presence of mink within watercourses of the project area and wider estate will be identified and implemented over the lifetime of the proposed development.
- 3.5.3 Measures may include mink raft monitoring together with humane trapping and would be agreed in consultation with SNH, THC and additional relevant stakeholders.

4 MONITORING

- 4.1.1 A monitoring programme to include compliance checking of the implementation of prescriptive measures along with the monitoring of the effectiveness of such measures will be established and agreed in consultation with SNH, THC and additional relevant stakeholders.
- 4.1.2 The requirement for any updated baseline surveys to act as Year 0 for monitoring purposes will also be identified and undertaken at the appropriate time.

FIGURE 1: PROJECT AREA

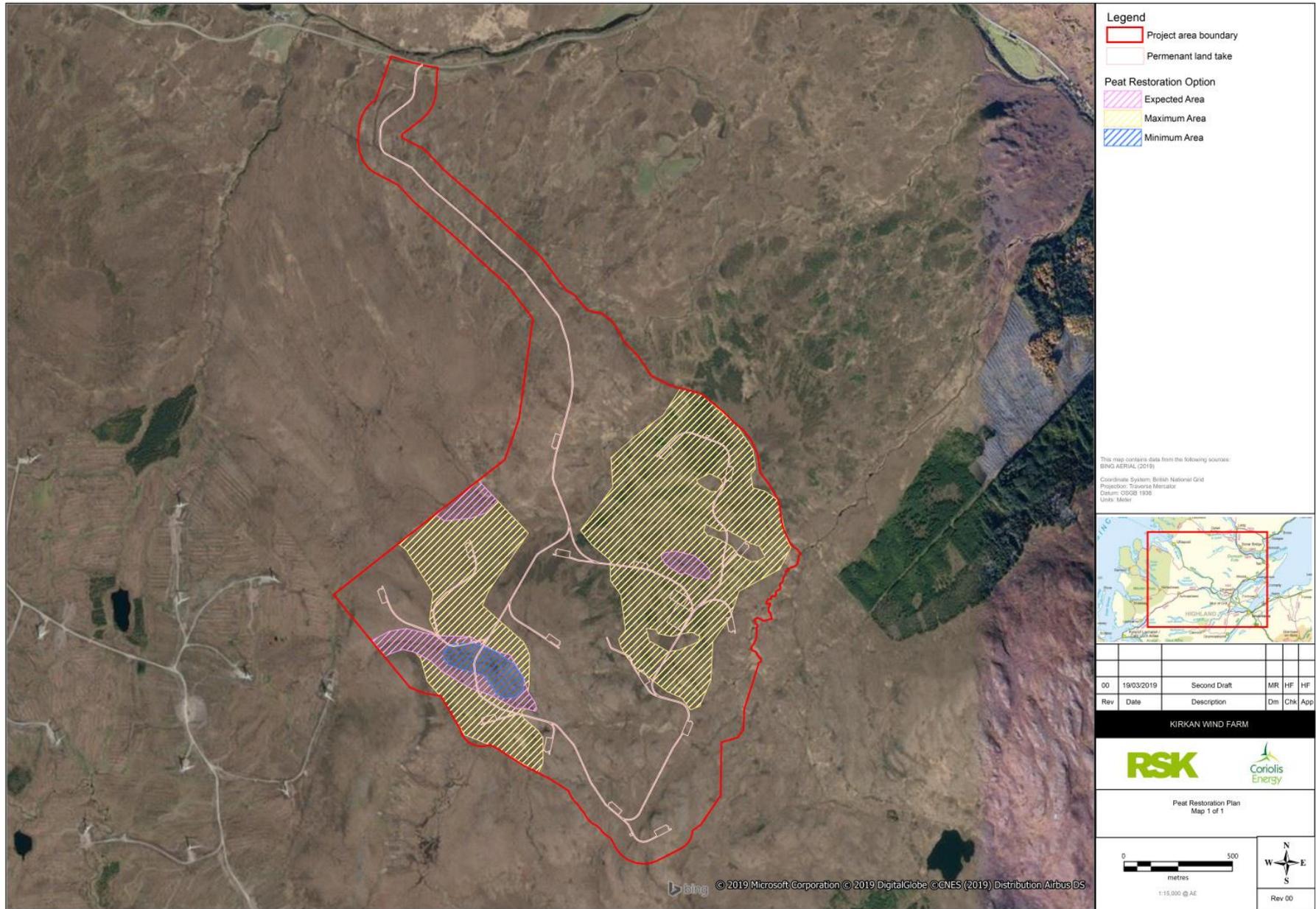


FIGURE 2: ESTATE BOUNDARY

